

Data Manipulation

Communication
media and
communication
rates

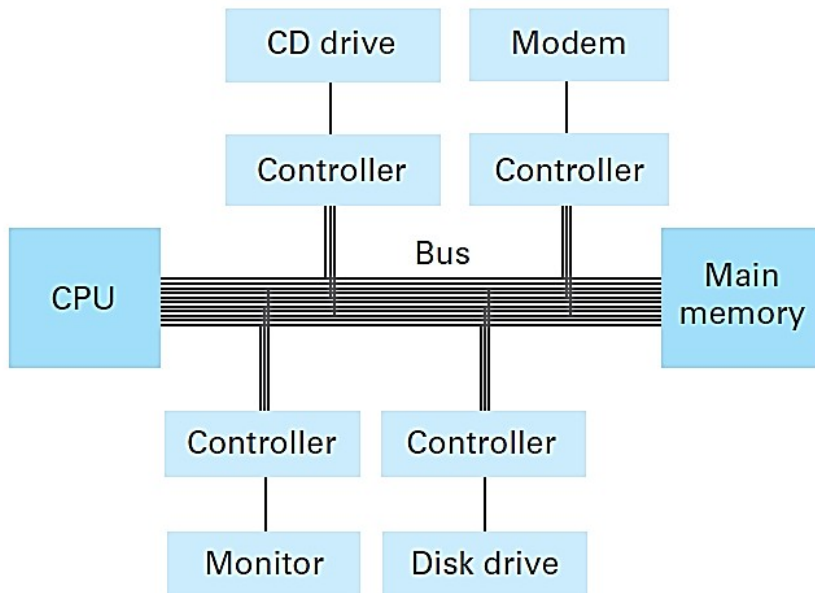
Communication Media

- ✓ Communication between computing devices is handled over two types of paths:
- ✓ **Parallel communication**
- ✓ **Serial Communication**

Communication Media

Parallel Communication

- ✓ Several signals are transferred at the same time, each on a separate line.
- ✓ Data transfer is good
- ✓ Requires complex architecture



Communication Media

Serial Communication

- ✓ Transfer data one after the other,
- ✓ Requires a simple data path
- ✓ Data transfer rate is relatively slower than parallel communication.
- ✓ USB and FireWire are examples of high-speed data transfer over a short distance.
- ✓ Ethernet connections for slightly longer distances.



Communication Media

Communication over longer distances

- - ✓ Traditional voice lines dominated the PC arena for many years.
 - ✓ Converting bit patterns to audible tones using Modem (Modulator-demodulator)

Communication Media

Communication over longer distances

- ✓ For faster long distance communication, DSL (Digital Subscriber Line)
- ✓ **Cable Modems:**
- ✓ Fibre Optics and Coaxial cables for high definition TV and computer network.

Communication Rates

- ✓ Rate at which bits are transferred from one computing component to another measured in bits per second (**bps**)
- - ✓ **Kbps** (Kilo bits)
 - ✓ **Mbps** (Million bits)
 - ✓ **Gbps** (Billion bits)
 - ✓ 8kbps = 1KB per second.
 - ✓ USB and Firewire provide several hundred Mbps.

Summary

Communication media and communication rates

- ✓ Serial communication
- ✓ Parallel communication
- ✓ Communication rates